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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,250	07/15/2003	Hiroshi Teramachi	928_002	8901

25191 7590 03/23/2007

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EXAMINER	
KRAUSE, JUSTIN MITCHELL	
ART UNIT	PAPER NUMBER
3682	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,250	TERAMACHI, HIROSHI	
	Examiner	Art Unit	
	Justin Krause	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/20/06* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 9, 2007 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Teramachi (US Patent 4,692,039).

Teramachi discloses a rolling guide apparatus comprising:

-a track rail (22) comprising a central plate portion,

-first and second rolling member contact plates (48,48') projecting outwardly from said central plate portion, and first and second fixed plates (42) projecting outwardly from said central plate portion, each of said rolling member contact plates having a

horizontal portion located at a root side adjacent the central plate portion and an inclined circular arc portion located at a projecting side opposite said root side (fig 6);

-and a movable block (24) having at least four sets of endlessly circulating rolling member rows built therein which are in rolling contact with at least two surfaces of said first and second rolling member contact plates of said track rail,

-wherein said central plate portion is elastically deformable by forces placed on said rolling member contact plates and said fixed plates. The material of the rail is inherently capable of some elastic deformation.

Regarding claim 3, the track rail of Teramachi is formed into an integral structure, and is capable of being made by drawing.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Regarding claim 6, the rail of Teramachi is rectilinear.

Regarding claim 8, the rolling members of Teramachi are balls (34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramachi as applied to claim 1 above, further in view of Willard (US Patent 1,178,196).

Teramachi does not disclose the track rail being formed by welding together back sides of bottom plate portions of a pair of rail members eac having a channel shaped cross section.

Willard teaches a track comprising two duplicate sections of metal placed back-to-back and riveted together (column 1, lines 28-31) for the purpose of producing a lighter weight track compared to a solid track of the same dimensions (column 2, lines 64-68). It would have been obvious to one having ordinary skill in the art at the time of the invention was made modify the track rail of Teramachi and form the track rail by connecting two rail members for the desired purpose of reducing the weight of the track as taught by Willard. With respect to the method of making limitation, the method by which a device is made is given minimal patentable weight within a device claim, and the track rail as taught by Willard is capable of being welded together. "Even though product-by-process claims are limited by and defined by the process,

determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (MPEP 2113 R-1).

Claims 5, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teramachi '039 as applied to claim 1 above, further in view of Teramachi '158 (US Patent 6,312,158).

Teramachi '039 does not disclose:

-upper and lower rolling guide apparatuses having respective upper and lower track rails are arranged in a vertically opposite relation with respect to each other with their respective track rails being disposed orthogonal to each other, and two movable blocks are coupled with each other in back-to-back contact to form an integral structure so as to be movable in two orthogonal directions

-a curvilinear rail curving in the vertical direction

-upper and lower track rails fixedly secured to centers of mounting plates with end portions of said mounting plates being fixedly attached to counterpart mounting surfaces.

Regarding claims 5 and 10, Teramachi '158 teaches upper and lower rolling guide apparatuses having respective upper (100b) and lower track rails (100a) are arranged in a vertically opposite relation with respect to each other with their respective

track rails being disposed orthogonal to each other, and two movable blocks (3) are coupled with each other in back-to-back contact to form an integral structure so as to be movable in two orthogonal directions (fig 11, Col 4, lines 7-14)) for the purpose of providing a biaxial guide structure (Col 2, line 31), and the upper and lower track rails of Teramachi '158 are secured to centers of mounting plates (51) with end portions of the mounting plates being fixedly attached to counter part mounting surfaces (300) with bolts so that fastening can be done from the upper side of the track rail, providing good workability (col 11, lines 21-26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Teramachi '039 to include upper and lower rolling guide apparatuses arranged orthogonal to each other for the desired purpose of providing a biaxial guide structure as taught by Teramachi '158.

Regarding claim 7, Teramachi '158 teaches a curvilinear track rail that is curved in a vertical direction for absorbing inclination of the apparatus (col 1, line 31).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Teramachi '039 and make the track rail curvilinear for the desired purpose of absorbing inclination of the apparatus as taught by Teramachi '158.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramachi as applied to claim 1 above, further in view of Morita (US Patent 5,005,987).

Teramachi does not disclose the rolling members on an upper side of the rolling member contact plates to be rollers and the rolling members on the lower side of the rolling member contact plates to be balls.

Morita teaches rolling members on an upper side of the rolling member contact plates to be rollers and the rolling members on the lower side of the rolling member contact plates to be balls (col 2, lines 48-53) for the purposes set forth in Col 6, lines 6-39:

1) As compared with the conventional guide units, the guide unit can be miniaturized and its application range is widened.

(2) As compared with the track member separating type, the rigidity of the casing is fairly increased.

(3) As compared with the size of casing, a larger downward load can be applied to the guide unit (an elastic displacement amount of the roller=1/2 to 1/3 of that of the ball).

(4) Among the total four right and left rolling elements track surfaces, two track surfaces are used for the balls instead of the rollers, so that the costs can be reduced.

(5) As compared with the type in which the rollers are used for all of the four tracks, the frictional resistance can be reduced.

(6) Since the angular contacting type balls are used, even if there is a variation in rectilinear motion rolling accuracy of the rollers on the two upper tracks, such a variation can be adjusted and absorbed on the ball side.

(7) A desired combination can be realized without losing the characteristics of the rollers and balls, respectively.

(8) When a diameter of roller and a diameter of ball are set to be almost equal, the common parts can be used and the like, so that it is advantageous.

(9) By providing the twisted passageway for the upper endless

circulating passageway, the endless circulating passageway is extended to the horizontal surface of the casing or the surface near it, thereby minimizing the height of casing. The mechanical strength of the casing can be enlarged.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Teramachi to include rollers on an upper side of the rolling member contact plates and balls on the lower side of the rolling member contact plates for the desired purposes of miniaturizing the guide unit and widening its application range, increasing casing rigidity, applying a larger downward load to the guide, reducing cost, reducing friction, adjusting for variation and absorbing variations in the rectilinear motion, and increasing the mechanical strength of the casing as taught by Morita.

Response to Arguments

Applicant's arguments with respect to claims 1-3 and 5-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK 3/20/07

Thomas R. Hannon
Primary Examiner